UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,316	06/26/2003	Hong Wang	42P16547	8010

8791 7590 12/04/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER
TREAT, WILLIAM M

ART UNIT	PAPER NUMBER
2181	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,316	WANG ET AL.	
	Examiner	Art Unit	
	William M. Treat	2181	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 September 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

WILLIAM M. TREAT
PRIMARY EXAMINER

1. Claims 1-30 are presented for examination.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicants have amended each of their independent claims to recite "switching to a stream mode if a branch-to-mesocode transition is detected in one of the plurality of streams; and switching to a normal mode if a mesocode-to-branch transition is detected" or similar language. On page 9 of applicants' specification applicants state: "For ease of reference, the alternative representation code 22' to 28' will be referred to 'mesocode.' In some embodiments, the mesocode is encapsulated by the boundary markers designated by reference numerals 30 and 32 as will be seen in Figure 4 of the drawings. Execution of the mesocode is triggered whenever a trigger is encountered in the original code. Thus, aspects of embodiments of the present invention involve embedding a trigger in the original code, e.g., trigger 34 shown in Figure 5 of the drawings. In other embodiments, an explicit trigger is not encoded in the original code, since the start boundary marker 30 may be used as a trigger." If applicants will review their specification and drawings, applicants will find that when a trigger is encountered it is found in the original code (i.e.,

they are not in a stream mode and not "in one of the plurality of streams") and that when a boundary marker is encountered which indicates a transition to mesocode they are external to the mesocode and also external to stream mode (i.e., they are not "in one of the plurality of streams"). For these reasons the examiner considers applicants' amended claim language to represent new matter.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. See paragraph 3, *supra*, for an explanation of the problem.

7. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "streams" in claims 1-30 is used by the claims to mean "non-stream code", while the accepted meaning is "code which has been formed into streams." The term is indefinite because the specification does not clearly redefine the term.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 6-7, 9-11, 14-15, are 17-19 rejected under 35 U.S.C. 102(b) as being clearly anticipated by Park (Patent No. 6,988,190).

10. Note in relation to applicants' claims to "converting at least some of the instructions in a stream into ISA-implementation specific instructions", Park taught a decoded instruction trace cache which would have all of its instructions as ISA-implementation specific instructions (col. 4, lines 3-6).

11. Claims 1-2, 6-10, 14-18, 20-22, and 25-29 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Ramirez et al. (Fetching Instruction Streams).

12. The examiner would suggest applicants read Section 2.2, at a minimum, before responding.

13. Claims 1-2, 6-10, 14-18, 20-22, and 25-29 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nair et al. (Exploiting Instruction Level Parallelism in Processors by Caching Scheduled Groups).

14. Claims 1-2, 4-10, 12-18, 20-22, and 24-29 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nair (Patent No. 6,304,962).

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims 3, 11, 19, 23, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nair (Patent No. 6,304,962).

18. In relation to applicants' claims to having a start instruction pointer and end instruction pointer (claims 3, 11, 19, 23, and 30) which depend from applicants' claims 1-2, 9-10, 17-18, 20-22, and 27-29, Nair taught the functional equivalent which is a start instruction pointer and length field which when combined yield the end instruction pointer (col. 4, lines 31-51).

19. Claims 7, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nair (Patent No. 6,304,962).

20. Nair speaks of his invention in relation to superscalar processors (col. 1, lines 24-33), and the examiner takes Official Notice that many such processors are based on RISC instruction sets that are directly decodable and therefore constitute ISA-

implementation specific instructions used to make up the superblocks of Nair resulting in such instructions being contiguous with the blocks.

21. Applicant's arguments filed 5/2/2006 have been fully considered but they are not persuasive.

22. Applicants have argued, in substance, each of the references does not teach "switching to a stream mode if a branch-to-mesocode transition is detected in one of the plurality of streams; and switching to a normal mode if a mesocode-to-branch transition is detected." As to Park and Ramirez, they both taught trace cache systems which switch to stream mode when a trace/stream/mesocode in the trace cache buffer is branched to and which switch to normal mode when the banch at the end of the trace/stream/mesocode does not lead to another entry in the trace cache. As to Nair (Patent No. 6,304,962), he taught at col. 7, lines 46-54, "It is then determined whether there is a matching entry in STB 104 (step 40). That is, it is determined whether the starting address (SA) of the current superblock supplied to STB 104 matches a starting address (of a superblock) used to index an entry in STB 104. If a matching entry is found in STB 104, then the method continues to step 50. Otherwise, the method terminates." In other words, his system continues in or switches to stream mode when a superblock/stream/mesocode in the superblock target buffer is branched to and switches to normal mode when the branch at the end of the superblock/stream/mesocode does not lead to another entry in the superblock target buffer. Nair (Exploiting ...) taught on page 15, the last paragraph, that "Execution proceeds from one LIW in the group to the next sequential LIW. The last LIW in the

group specifies a group exit address which could be the entry address of either an existing group in the DIF cache or the address of an instruction which needs to be executed in the primary engine." In other words, his system continues in or switches to stream mode when a group/stream/mesocode in the DIF cache is branched to and switches to normal mode when the branch at the end of the group/stream/mesocode does not lead to another entry in the DIF cache.

23. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

24. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

25. Any inquiry concerning this communication should be directed to William M. Treat at telephone number (571) 272-4175.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WILLIAM M. TREAT
PRIMARY EXAMINER